

NOTES ON THE GENUS CLERODENDRUM (VERBENACEAE). XV

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CLERODENDRUM Burm.

Additional & emended bibliography: Skeat, Journ. Roy. Asiat. Soc. Straits 31: 34. 1898; Ridl., Agric. Bull. Straits Fed. Mal. St. 1: 219. 1902; C. B. Clarke in Schmidt, Bot. Tidsskr. 26: 173--174. 1904; Chakrabarti & Mondal, Acarologia 21: 396--400. 1980; Prasad, Mehta, Dave, & Suma, Indian Journ. Exp. Biol. 18: 1524--1525. 1980; Chakrabarti & Mondal, Biol. Abstr. 72: 343. 1981; Prasad, Mehta, Dave, & Suma, Biol. Abstr. 72: 597. 1981; Beattie, Evolut. Ecol. Ant-pl. Mut. 68. 1985; Clewell, Guide Vasc. Pl. Fla. Panhandle 510--511. 1985; Mold., Phytologia 59: 324--359. 1986.

CLERODENDRUM EXCAVATUM var. CUNEATUM (DeWild.) Thomas

Continuing DeWildeman's original (1909) description of this plant: "floribus....breviter pedicellatis; pedicello 12--15 mm. longo, basi bracteolato; bracteis lineari-lanceolatis, margine ciliatis, 6 mm. circ. longis; calyce circ. 27 mm. longo, basi breviter tubuloso, lobis ovato-lanceolatis, acutis, circ. 22 mm. longis et 8 mm. longis [=latis], glabris sed margine ciliatis; corollis rubris, tubo 12 cm. circ. longo, glabro, infundibuliformi apice breviter inflato; staminibus exsertis."

According to experts on the current Code of Botanical Nomenclature (e.g., Dr. Rickett and Rogers), this variety should be credited only to Thomas. They claim that under the Code *C. excavatum* var. *cuneatum* DeWild. is invalid ("not published") because *C. excavatum* DeWild. is itself invalid (and "unpublished"), having been proposed without a single word of description. Var. *cuneatum* was obviously intended by DeWildeman as the typical variety of the species whose lengthy and entirely adequate description he intended to serve as the specific description. Thomas (1936), however, adopted var. *rotundatum* DeWild. as the typical variety, which he had the right to do under the present Code.

The variety seems to me to be a very weak one -- the leaf-blade shape character is poorly marked, but perhaps the red color of the corolla may indicate a color form status. In his original description DeWildeman cites only the type, but in his 1912 work he adds an unnumbered Deleval collection.

In speaking of his two varieties DeWildeman says "Nous réunissons ces deux variétés sous un même nom. Toutes deux présentent des tiges creuses, des glomérules florifères caulinaires, non terminaux, mais dans la forme des feuilles il y a des différences qui, à première vue, poussent à la séparation totale; cependant la morphologie générale des feuilles est si semblable dans les deux plantes que nous avons préféré les réunir un même nom spécifique, et sur deux vocables de variétés. Ce *Clerodendron* a des affinités avec le *C. grandifolium* Gürke....mais la disposition des inflorescences ter-

minales chez cette dernière espèce, fait reconnaître très aisément le *C. excavatum*, qui serait suivant certains une plante myrmécophile, suivant d'autres la tige creuse serait remplie d'eau. Nous n'avons pas trouvé de fourmis à l'intérieur des tubes creux qui forment les tiges."

It seems most probable that the *Laurent 1011* sheet in the Brussels herbarium is the actual sheet from which DeWildeman drew his leaf description, although in his publication he cites only *Laurent 1913* -- *1011* is marked "n.v." on the sheet in his handwriting.

The plant has been collected in wet forests and swamps, in flower in March. On *Laurent 1011* the corollas are described as "rose" and on *1913* as "red".

For var. *cuneatum* Thomas (1936) cites only *Laurent 1913* from Zaire and *Elbert 335* from eastern Cameroons.

Material of *C. excavatum* var. *cuneatum* has been misidentified and distributed in some herbaria as *C. angolense* Gürke and *C. excavatum* var. *rotundatum* DeWild.

Citations: ZAIRE: *Hendrickx 849* (Br); *Laurent 1011* (Br), *1913* (Br--type, Ld--photo of type, N--photo of type); *Sapin s.n.* [Bolofo] (Br). MOUNTED ILLUSTRATIONS: DeWild., *Etud. Fl. Bas-Moyen-Congo* pl. 11, fig. 1--3. 1909 (N).

CLERODENDRUM FARAFANGANENSE Mold., *Amer. Journ. Bot.* 38: 322--323. 1951.

Bibliography: Mold., *Amer. Journ. Bot.* 38: 322--323. 1951; Mold. in *Humbert, Fl. Madag.* 174: 153, 217--219, & 267, fig. 35 (2). 1956; Mold., *Résumé* 155 & 449. 1959; G. Taylor, *Ind. Kew. Suppl.* 12: 136. 1959; Mold., *Fifth Summ.* 1: 260 (1971) and 2: 865. 1971; Mold., *Phytol. Mem.* 2: 249 & 536. 1980; Mold., *Phytologia* 58: 188. 1985.

Illustrations: Mold. in *Humbert, Fl. Madag.* 174: 217, fig. 35 (2). 1956.

A bush, about 1 m. tall; branches and branchlets slender, obtusely tetragonal, gray, glabrescent, more or less prominently lenticellate; twigs very slender, mostly compressed-tetragonal, sulcate between the angles and often slightly puberulent-strigillose in the channel, light-gray; leaf-scars rather large and prominent on the younger parts; nodes not annulate; principal internodes 1--4 cm. long; leaves decussate-opposite, numerous; petioles very slender, 3-5 mm. long, glabrous; leaf-blades chartaceous, often rather firm-textured when fully mature, rather uniformly bright-green on both surfaces, elliptic or oblanceolate, 2--5.5 cm. long, 0.9--2.4 cm. wide, apically obtuse to rather bluntly short-acuminate, marginally entire and usually slightly revolute, basally acute, glabrous and somewhat lustrous on both surfaces; midrib very slender, flat above, prominent beneath; secondaries very slender, 3--7 per side, divergent, arcuately joined close to the margins, mostly subprominulous above, prominulous beneath; vein and veinlet reticulation abundant, often subprominulous above, only the largest portions prominulous beneath; inflorescence axillary, 1-flowered; peduncles very slender, 5--8 mm. long, stramineous, glabrous; pedicels exactly similar to the peduncle in texture and color and usually equaling it in length,

glabrous; foliaceous bracts absent; bractlets usually limited to one pair at the apex of the peduncle, setaceous, 1 mm. long or less; calyx herbaceous, tubular, 1.8--2.5 cm. long, 5.5--9 mm. wide, glabrous, slightly zygomorphic, its rim 5-lobed, the lobes ovate, 3--4 mm. long, apically attenuate-subacuminate; corolla infundibular, vivid-rose or wine-color, usually curvate, externally very minutely puberulous, the tube broadly infundibular, gradually ampliate from above the calyx to the apex, 2.5--3.5 cm. long, its limb 5-parted, the lobes about 1 cm. long, apically obtuse; stamens and style exerted about 2 cm. from the corolla-mouth; fruiting-calyx and fruit not known.

This endemic species is based on *Decary 5153* from along roadsides in a forest at Midongy du Sud, in the province of Farafangana, Madagascar, collected on August 21, 1926, and deposited in the Paris herbarium. It has also been collected in full sun along open roadsides, flowering in August. The corollas are said to have been "rose vif" on *Decary 4981*.

A key for distinguishing this species from the other known Madagascar taxa will be found under *C. baronianum* Oliv. in the present series of notes.

Citations: MADAGASCAR: *Decary 4981* (N, P), *5153* (E--photo of type, F--photo of type, Ld--photo of type, N--photo of type, P--type), *10604* (P).

*CLERODENDRUM FASCICULATUM* Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 103. 1936.

Bibliography: B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 13, 40, 70, 93, & 103. 1936; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 49 & 89. 1942; Hill & Salisb., Ind. Kew. Suppl. 10: 55. 1947; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 116 & 181. 1949; Mold., Résumé 144 & 449. 1959; Mold., Fifth Summ. 1: 235 (1971) and 2: 865. 1971; Mold., Phytol. Mem. 2: 225 & 536. 1980.

A shrub; branches glabrous; branchlets villous, with accessory buds; leaves decussate-opposite; petioles about 1 cm. long; leaf-blades ovate or ovate-oblong, 8--12 cm. long, 7--10 cm. wide, apically acuminate, marginally entire or sinuate, basally subcordate, glabrous above, pilose on the venation beneath; venation prominent beneath; inflorescence terminal, fasciculate, head-like; peduncles 0.3--2 cm. long; pedicels 1--3 mm. long, very villous; bracts small, subulate-filiform, 1--6 mm. long, villous; calyx tubular-campanulate, about 4 mm. long, basally pubescent-villous, 5-dentate to about  $\frac{1}{4}$  its length, the teeth deltoid, apically acute; corolla whitish, its tube about 1.7 cm. long, externally glandulose with sessile glands, basally and apically dilated, the lobes 5, obovate, subequal, about 5 mm. long; stamens long-exserted, inserted below the mouth of the corolla-tube; filaments about 4 cm. long; anthers elongate, 2 mm. long; style 3.5--4 cm. long, subequaling the stamens, basally incrassate; stigma plainly shortly bifid; ovary 1.6 mm. long, 4-lobed, externally glabrous; mature fruit not known.

This species is based on *H. Meyer 1000* from the western slopes of the Russige Mountains in southern Ruanda, Tanganyika, collected in the summer of 1911, and deposited in the Berlin herbarium, now de-

stroyed, The species is known thus far to me only from the type collection and I know nothing more about it than is given in the meager bibliography (above).

*CLERODENDRUM FASTIGIATUM* (Hunter) H. J. Lam, Verbenac. Malay. Arch. 317 & 363 [as "*Clerodendron*"]. 1919; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 60, 66, & 89. 1942.

Synonymy: *Volkameria fastigiata* Hunter ex Ridl., Journ. Roy. Asiatic Soc. Straits 53: 102--103. 1909. *Clerodendron fastigiatum* (Hunter) H. J. Lam, Verbenac. Malay. Arch. 317. 1919. *Clerodendron fastigiatum* H. J. Lam apud A. W. Hill, Ind. Kew. Suppl. 6: 49. 1926.

Bibliography: Ridl., Journ. Roy. Asiatic Soc. Straits 53: 102--103. 1909; Prain, Ind. Kew. Suppl. 4, imp. 1, 248. 1913; H. Hallier, Meded. Rijks Herb. Leid. 37: 75. 1918; H. J. Lam, Verbenac. Malay. Arch. 317 & 363. 1919; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 94, 109, & viii. 1921; A. W. Hill, Ind. Kew. Suppl. 6: 49. 1926; Fedde & Schust., Justs Bot. Jahresber. 47 (2): 245. 1927; Mold., Alph. List Inv. Names 56. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 60, 66, & 89 (1942) and ed. 2, 138, 148, & 181. 1949; Prain, Ind. Kew. Suppl. 4, imp. 2, 248. 1958; Mold., Résumé 179, 198, 392, & 449. 1959; Mold., Fifth Summ. 1: 304 & 332 (1971) and 2: 733 & 865. 1971; Mold., Phytol. Mem. 2: 295, 322, & 536. 1980; Mold., Phytologia 54: 239 (1983) and 58: 404. 1985.

The original (1909) description of this species is: "*Volkameria fastigiata*, H. Unarmed; Leaves ovate, unequally serrate. Corymbs terminal, trichotomous, suffastigiata [sic]. Stem herbaceous; or perhaps somewhat shrubby. Leaves opposite, decussated, petioled, ovate, unequally serrate, wrinkled; above smooth, below slightly downy. Petioles short, slender, furrowed above, widely spreading. Corymbs terminal, trichotomous; peduncles brachiate, three cleft pedicels short, slender. Flowers large, white, sweet scented. Calyx five cleft, segments lanceolate, erect; when the fruit ripens reflected. Corolla tube long, straight; limb five cleft segments obtuse, inclining to one side. Stamens. Filaments thread form, the length of the corol, white; anthers small, deep yellow. Berry roundish, smooth. The plant was brought from Amboyna, and flowered before it was removed from the box in which it came." Prain (1913) mistakenly gives its native land as "Penang"; Fedde & Schuster (1927) give it as "Molukken".

Bakhuizen (1921) suggests that this species may possibly be conspecific with *C. viscosum* Vent., a species not known to me from either Penang or Amboina. Hallier (1918) claims that it is closely related to *C. calamitosum* L., *C. barba-felis* H. Hallier, *C. eriosiphon* Schau., *C. disparifolium* Blume, *C. macrophyllum* Blume [= *C. phyllomega* Steud.], *C. garrettianum* Craib, *C. griffithianum* C. B. Clarke, *C. klemmei* Elm., *C. mindorensis* Merr., and *C. phlomidis* L. f.

Nothing is known to me of *C. fastigiatum* beyond what is given in its bibliography (above).

*CLERODENDRUM FAULKNERI* Mold., Phytologia 4: 47--48. 1952.

Bibliography: Mold., Phytologia 4: 47--48. 1952; Mold., Résumé

150 & 449. 1959; G. Taylor, Ind. Kew. Suppl. 12: 36. 1959; Mold., Résumé Suppl. 13: 4. 1966; Mold., Fifth Summ. 1: 250 (1971) and 2: 865. 1971; Mold., Phytol. Mem. 2: 240 & 536. 1980.

A large bush, perennial rhizomatous herb, or subshrub; rhizome thick; branches rather stout, hollow, gray, striate, glabrous, the bark with a curious mesh-like texture under a handlens; branchlets slender or stout, hollow, often collapsing in drying, nigrescent in drying, glabrous; nodes not annulate; principal internodes 5--10 cm. long; leaves decussate-opposite, usually borne only on the young branchlets at time of anthesis; petioles obsolete or short and winged, usually merging so gradually into the lamina as to be difficult to distinguish; leaf-blades membranous, bright-green above, lighter beneath, oblanceolate, 12--14 cm. long, 2.5--4 cm. wide, apically rounded or subacute, marginally shallowly serrate from about the middle to the apex with low rounded teeth, basally long-attenuate into the petiole, glabrous on both surfaces; midrib slender, flat above, prominulous beneath; secondaries very slender, 4--6 per side, arcuate-ascending, indistinctly anastomosing beneath, flat or obscure above, prominulous beneath; veinlet reticulation sparse, mostly obscure above, flat beneath; inflorescence terminal, comprising a narrow-cylindric panicle composed of 5--10 pairs of dense fascicles of flowers; peduncles similar to the adjacent branchlet, mostly hollow, nigrescent in drying, glabrous, often very stout, 7--11 cm. long; sympodia similar to the peduncles in all respects, sometimes elongate to 7 cm. in fruit, glabrous, nigrescent, unbranched; pedicels filiform, about 5 mm. long, compressed, glabrous, issuing directly from the nodes of the inflorescence-axis, in fascicles of about 10; bractlets lanceolate, 7--12 mm. long, apically acuminate, glabrous; calyx campanulate, 5--6 mm. long, glabrous, deeply 4-lobed to about the middle, the lobes ovate-oblong, apically acute; corolla rich-purple and pale-green, strongly zygomorphic, about 1.5 cm. long; stamens long-exserted, about 2 cm. long, strongly arched; fruiting-calyx cupuliform or patteliform, only slightly incrassate, often reflexed or variously shrivelled, about 1.5 cm. wide, glabrous, deeply triangular-lobed to the middle or beyond; fruit drupaceous, about 7 mm. long and 10 mm. wide, deeply 4-lobed or sometimes only 2- or 3-lobed, externally glabrous, wrinkled, consisting of 4 (or by abortion 2 or 3) nutlets.

This species is based on *H. Faulkner Kew 115* [drawing 536] "moderately common in open forests and plantations" at the Namagoa Estate on the road from Lugela to Mocuba, Quelimane district, Mozambique, collected in December, 1948, and deposited in the Britton Herbarium at the New York Botanical Garden.

Collectors have encountered this plant in open woodlands and open forests of *Brachystegia boehmii* & *B. spiciformis* with tufts of *Oxytenanthera abyssinica* and a herbaceous layer of *Digitaria* and *Panicum*, in flower in November and December.

Obviously a member of the Subgenus *Cyclonema*, material of this species has been misidentified and distributed in some herbaria as *Clerodendron myricoides* (Hochst.) R. Br.

The corolla is said to have been "bluish, with a reddish lower

lip" on *Mendonça 1365*

Citations: MOZAMBIQUE: Cabo Delgado: *Torre & Paiva 9636* (U1). Niassa: *Hornby 1106* (U1). Quelimane: *H. Faulkner Kew 115* [drawing 536] (N--type, N--isotype). Zambezia: *F. A. Mendonça 1365* (U1).

*CLERODENDRUM FILIPES* Mold., Amer. Journ. Bot. 38: 323. 1951.

Bibliography: Mold., Amer. Journ. Bot. 38: 323. 1951; Mold. in Humbert, Fl. Madag. 174: 153, 217, 220--221, & 267, fig. 35 (4). 1956; Mold., Résumé 155 & 449. 1959; G. Taylor, Ind. Kew. Suppl. 12: 36. 1959; Mold., Fifth Summ. 1: 260 (1971) and 2: 865. 1971; Mold., Phytol. Mem. 2: 249 & 536. 1980; Mold., Phytologia 58: 188. 1985.

Illustrations: Mold. in Humbert, Fl. Madag. 174: 217, fig. 35 (4). 1956.

A shrub, to 4 m. tall; branches and branchlets very slender, twiggy, obtusely tetragonal, often prominently lenticellate, grayish, glabrate; twigs mostly very short, very minutely and obscurely puberulous or glabrescent; nodes not annulate; principal internodes mostly much abbreviated, 1--6 mm. long on the twigs, elongate to 6 cm. on older wood; leaf-scars prominent on the twigs, white, with elevated margins; leaves decussate-opposite, persistent; petioles very slender, 1--5 mm. long, very minutely puberulous; leaf-blades thin-chartaceous or submembranous. often rather fragile, rather dark-green and shiny above, lighter beneath, lanceolate, 2.5--7 cm. long, 1--2.5 cm. wide, apically long-acuminate or subcaudate, marginally entire, basally acute or slightly subacuminate, glabrous on both surfaces; inflorescence axillary, usually borne at the very uppermost nodes, 1- or 2-flowered; peduncles filiform, 3--7.5 cm. long, minutely puberulent; pedicels filiform, 5--10 mm. long, very minutely puberulent; foliaceous bracts absent; bractlets 1 or 2 at the apex of the peduncle, setaceous, 1 mm. long or less; calyx herbaceous, obconic-tubular, 1.5--1.8 cm. long, mostly 4--5 mm. wide, glabrous, not venose, brunnescenscent in drying, its rim 5-lobed, the lobes ovate, 4--5 mm. long, apically attenuate-acute, after anthesis enlarged to almost 3 cm. long and 1.7 cm. wide, broadly obconic, basally venose-wrinkled; corolla hypocrateriform, dark-red, its tube narrow-cylindric, somewhat over 2.5 cm. long, externally glabrate, the limb 5-parted, 1--1.5 cm. wide, the lobes 5--7 mm. long, apically obtuse; stamens and style exerted 5--8 cm. from the corolla-mouth; fruit not known.

This endemic Madagascar species is based on *Perrier 10199* from woods, at 800 m. altitude, in the eastern part of the Maningory basin, Madagascar, collected in July, 1912, and deposited in the Paris herbarium. Decary reports encountering it at the borders of forests.

A key for distinguishing this species from its Madagascar congeners will be found under *C. baronianum* Oliv. in the present series of notes.

Citations: MADAGASCAR: *Decary 18371* (P); *Perrier 10199* (E--photo of type, F--photo of type, Ld--photo of type, N--isotype, N--photo of type, P--type).

*CLERODENDRUM FINETII* Dop in Lecomte, Notul. Syst. 4: 12 [as "*Clerodendron*"]. 1920; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 59 & 89. 1942.

Synonymy: *Clerodendron finetii* Dop in Lecomte, Notul. Syst. 4: 12. 1920.

Bibliography: Dop in Lecomte, Notul. Syst. 4: 12. 1920; A. W. Hill., Ind. Kew. Suppl. 6: 49. 1926; Fedde & Schust., Justs Bot. Jahresber. 48 (1): 497. 1927; Dop in Lecomte, Fl. Gén. Indo-chine 4: 851 & 870. 1935; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 59 & 89. 1942; H. N. & A. L. Mold., Pl. Life 2: 59. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 136 & 181. 1949; Mold., Résumé 175 & 449. 1959; Mold., Fifth Summ. 1: 299 (1971) and 2: 865. 1971; Mold., Phytologia 31: 395. 1975; Mold., Phytol. Mem. 2: 288, 385, & 536. 1980.

A shrub; branches subtetragonal, pubescent; nodes annulate with a band of interpetiolar twisted hairs; leaves decussate-opposite; petioles 4--5 mm. long, pubescent, apically alate; leaf-blades membranous, elliptic, 15--18 cm. long, 5--7 cm. wide, apically short-acuminate, marginally irregularly and weakly sinuate or sinuate-dentate and ciliate, basally attenuate and decurrent into the petiole, sparsely white-pilose above, softly pubescent beneath; midrib prominent; secondaries very slender, 14--16; veins and veinlets irregular, the reticulation rather distinct; inflorescence large, paniculate, foliose, terminal or subterminal, to 40 cm. long and 15 cm. wide, pubescent, the ramifications di- or trichotomous, the cymes racemiform; bracts foliaceous; bractlets subulate; pedicels 3--6 mm. long; calyx turbinate, herbaceous, green, 5--6 mm. long, externally somewhat velutinous and glandulose, the tube 1.5 mm. long, the lobes oval, 2.5--4.5 mm. long, 2 mm. wide, apically acuminate; corolla white, glabrous, its tube filiform, 1.5--2 cm. long, the lobes oblong, 6--8 mm. long, apically obtuse; stamens long-exserted; anthers oblong; style slender; stigma shortly bifid; ovary externally glabrous.

This species is based on an unnumbered Lecomte & Finet collection from Sakhandal island, Pnom-penh, Angkor-thom, Cambodia. A key to help distinguish it from other Indochinese taxa of this genus will be found under *C. hahnianum* Dop in the present series of notes. Nothing is known to me about it beyond what is stated in its bibliography (above).

*CLERODENDRUM FISCHERI* Gürke, Engl. Bot. Jahrb. 18: 172 [as "*Clerodendron*"]. 1893; B. Thomas. Engl. Bot. Jahrb. 68: [Gatt. Clerod] 37, 64, & 93. 1936.

Synonymy: *Clerodendron fischeri* Gürke, Engl. Bot. Jahrb. 18: 172. 1893.

Bibliography: Gürke, Engl. Bot. Jahrb. 18: 172. 1893; Engl., Abhandl. Preuss. Akad. Wiss. 1894: 27. 1894; Gürke in Engl., Pflanzenw. Ost-Afr. C: 340. 1895; J. G. Baker in Thiseit.-Dyer, Fl. Trop. Afr. 5: 294 & 306. 1900; Prain, Ind. Kew. Suppl. 4, imp. 1, 101 (1901) and imp. 2, 101. 1941; Mold., Alph. List Inv. Names 19. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 49, 51, & 89. 1942; H.

N. & A. L. Mold., Pl. Life 2: 59. 1948; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 116, 120, & 181. 1949; Mold., Résumé 144, 150, & 449. 1959; Prain, Ind. Kew. Suppl. 4, imp. 3, 101. 1959; Dale & Greenway, Kenya Trees Shrubs 582 & 584. 1961; Mold., Résumé Suppl. 13: 4 (1966) and 15: 8. 1967; Gillett, Numb. Check-list Trees Kenya 46. 1970; Mold., Fifth Summ. 1: 235, 250, 251, & 454 (1971) and 2: 865. 1971; Mold., Phytol. Mem. 2: 225, 230, 240, & 536. 1980; Mold., Phytologia 58: 303, 422, 435, & 438 (1985) and 59: 259. 1986.

A strong woody shrub or undershrub, 0.3--3 m. tall; branchlets pubescent or puberulent; sap colorless; leaves decussate-opposite; petioles about 1 cm. long; leaf-blades coriaceous, oblong or ovate-subrotund, 10--15 cm. long, 5--9 cm. wide, apically acute, marginally entire, basally attenuate into the petiole, reticulate-veined, deep-green, sparsely pubescent above, more densely subvillous with very long hairs beneath; venation conspicuously impressed above and prominent beneath; inflorescence capitate, bracteate; flowers regular, fragrant with a musky odor, sessile; bracts and bractlets membranous, lanceolate, apically long-acuminate, basally attenuate into the stalk, subvillous, the outer bracts to 15 mm. long and 4--5 mm. wide; calyx campanulate, mauve, 1.9--2.1 cm. long, externally subvillous, 5-parted almost to the base, the tube very short, the lobes membranous, ovate, 8--10 mm. wide, apically acuminate, reticulate-venose; corolla white or creamy-white, elongate-tubular, externally sparsely pubescent with glanduliferous hairs, the tube slender, incurved, 9--13 cm. long, apically inflated, the lobes 5, unequal, obovate, about 1.2 cm. long; stamens and style very long-exserted.

This species is based on *Fischer 483* from the coast of Zanzibar, and *Holst 2194* and *Stuhlmann 3492* from Tanganyika; of these Thomas (1936) has designated the Fischer collection as the type. Gürke (1893) comments that "Von dem nahe verwandten *C. capitatum* Schum. et Thonn. ist diese Art hauptsächlich durch die grossen, sehr dicken, runden Blätter mit stark hervortretenden Adern verschieden." In his 1895 work he says: "Verwandt mit *C. capitatum*, aber mit viel dickeren, grösseren Bl[ättern], auch stärker behaart, und mit längeren, ebenfalls weissen Bl[üthen].... Ein 2--2,5 m hoher Strauch in Buschlichtungen und auf fruchtbarem Boden."

Baker (1900) cites *Fischer 483*, *Holst 2194* & *2910*, and *Stuhlmann 3492* from Tanzania. Thomas (1936) cites *Elliot 115*, *Fischer 483*, *Holst 2194*, *Schlechter 12249*, and *Schlieben 6119* from Tanzania. Dale & Greenway (1961) cite *Jeffery K.140* from Kenya.

Collectors have found *C. fischeri* growing in sandy or red-sandy soil in secondary forests, forest patches, clearings, in the sub-strate of open deciduous forests, and on sand and brown soil of grassland between forests and coppices, often only "scattered", at 160--400 m. altitude, in flower in March, May, July, August, and October, and in fruit in July.

The corollas are described as "white" on *Barbosa 1289*, *Faulkner 254*, *Schlieben 1898* & *6119*, and *Tanner R.T.2009* and "creamy-white" on *Cedro 292*; Engler (1894) refers to them as "yellowish-white", asserting that the plant occurs "vereinzelt auf fruchtbaren Boden".

It may be worth mentioning that the Gürke (1893) reference in the

literature of this species is often [e.g., by Prain (1901)] incorrectly cited by the misleading volume titlepage date of "1894".

A key for distinguishing *C. fischeri* from at least some of its immediate relatives will be found under *C. discolor* (Klotzsch) Vatke in the present series of notes.

Material of *C. fischeri* has been misidentified and distributed in some herbaria as *C. capitatum* (Willd.) Schum. & Thonn. and *C. robustum* Klotzsch. On the other hand, the *Peter 21076*, distributed as *C. fischeri*, actually is *C. capitatum* var. *conglobatum* (J. G. Baker) Thomas.

Citations: TANZANIA: Tanganyika: *Schlieben 1898* (Br), *6119* (B, Br, Ld--photo, Mu, N, N--photo, S); *Tanner RT.2009* (B, Ba, Ca--170362, Mi, N). MOZAMBIQUE: Lourenço Marques: *Torre 6774* (U1). Manica e Sofala: *Barbosa 1289* (U1); *Garcia 469* (U1). Moçambique: *Cedro 292* (Af); *Exell, Mendonça, & Wild 608* (U1); *H. G. Faulkner 172* (Af), *254* [drawing 403] (Af); *F. A. Mendonça 1241* (U1); *Torre 610* (U1). Niassa: *Ruis Monteiro 24* (Ld, U1). Quilimane: *H. Faulkner Kew 469* (N).

*CLERODENDRUM FISCHERI* var. *ROBUSTUM* (Klotzsch) Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 64. 1936.

Synonymy: *Clerodendron robustum* Klotzsch in Peters, Naturwiss. Reise Mossamb. 6 [Bot. 1]: 259. 1861. *Clerodendrum robustum* Klotzsch apud B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 64 in syn. 1936.

Bibliography: Klotzsch in Peters, Naturwiss. Reise Mossamb. 6 [Bot. 1]: 259. 1861; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; Gürke in Engl., Pflanzenw. Ost-Afr. C: 340. 1895; J. G. Baker in Thiseitl-Dyer, Fl. Trop. Afr. 5: 305. 1900; K. Schum., Justs Bot. Jahresber. 28 (1): 496. 1900; Menzel, Beitr. Geolog. Erforsch. Deutsch. Schutzgeb. 18: 30. 1920; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 64 & 95. 1936; Mold., Alph. List Inv. Names 19. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 49, 51, & 89. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 116, 120, & 181. 1949; Mold., Résumé 144, 150, 268, & 449. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Mold., Résumé Suppl. 15: 8. 1967; Mold., Fifth Summ. 1: 235, 251, & 454 (1971) and 2: 865. 1971; Mold., Phytol. Mem. 2: 225, 240, & 536. 1980; Mold., Phytologia 58: 422, 435, & 438. 1985.

This variety differs from the typical form of the species in having the leaves and calyxes only sparingly pilose.

The variety is based on an unnumbered Peters collection from Querimba, Mozambique, collected in 1847. Thomas (1936) cites also *Braun 1237* and *Busse 2611* from Tanganyika.

Gürke (1895) asserts that this taxon is "Von *C. capitatum* durch die dicken lederartigen B[lätter] verschieden", but, actually, the leaf-blades are also described as coriaceous in the typical form.

Collectors have encountered *C. fischeri* var. *robustum* along roadsides and in abandoned cultivated fields. It is described as a scandent shrub with white corollas, flowering in May. A note com-

municated to me personally by Sir George Taylor at Kew, dated June 13, 1966, affirms that "There seems to be little doubt as to the identity of this gathering [Leach & Rutherford-Smith 10945], of which the Kew duplicate has fully matured flowers, although there is no authenticated material in Kew for comparison".

Menzel (1920) reports finding this plant fossilized in Pleistocene tufa in the Cameroons. Baker (1900) avers that it, as well as *C. stenanthum* Klotzsch and *C. mossambicense* Klotzsch, are conspecific with *C. capitatum* (Willd.) Schum. & Thonn. I regard *C. mossambicense* as a valid species, with *C. stenanthum* a synonym.

It may be mentioned here that Thomas (1936) cites the original Klotzsch (1861) publication as "1862". Also, the Schumann (1900) work is sometimes cited as "1902".

Material of *C. fischeri* var. *robustum* has been misidentified and distributed in some herbaria as *C. swynnertonii* S. Moore. On the other hand, the Peter 25298, distributed as *C. fischeri* var. *robustum*, actually is *C. capitatum* var. *cephalanthum* (Oliv.) J. G. Baker, Peter 25091 is *C. capitatum* var. *conglobatum* (J. G. Baker) Thomas, and Barbosa 1289 is typical *C. fischeri* Gürke.

Citations: MOZAMBIQUE: Niassa: Leach & Rutherford-Smith 10945 (Ld, U1).

*CLERODENDRUM FISTULOSUM* Becc., Malesia 2: 35 & 314 [as "*Clerodendron*"]. 1884; H. Hallier, Meded. Rijks Herb. Leid. 37: 76. 1918.

Synonymy: *Clerodendron inflatum* Becc., Malesia 2: 211. 1884.

*Clerodendron fistulosum* Becc., Malesia 2: 35 & 314, pl. 4. 1884.

*Claredendrum fistulosum* Mukherjee & Chanda, Trans. Bose Res. Inst. 41: 40 sphalm. 1978.

Bibliography: Becc., Malesia 2: 35, 47--51, 211, 291, 314, & 340, pl. 4. 1884; Bower, Proc. Phil. Soc. Glasgow 18: 323. 1887; Schimp., Wechselbez. Zwisch. Pfl. Ameisen. 1888; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 561. 1893; Heim, Assoc. Franç. Avanc. Sci. Bordeaux 1: 51. 1895; Ridl., Journ. Bot. Brit. 33: 42 & 43. 1895; Heim, Ann. Rep. Smithson. Inst. 1896: 432, pl. 18. 1898; Becc., Nelle Foreste Born. 542 & 643. 1902; J. C. Willis, Dict. Flow. Pl., ed. 2, 309. 1903; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 1, 496. 1906; J. C. Willis, Dict. Flow. Pl., ed. 3, 317. 1908; Miede, Abhandl. Sachs. Gesel. Wiss. Math.-phys. Kl. 32: 312--361. 1911; H. Hallier, Meded. Rijks Herb. Leid. 37: 75--76. 1918; H. J. Lam, Verbenac. Malay. Arch. 311 & 363. 1919; DeWild., Compt. Rend. Hebdomad. Seanc. Mem. Soc. Biol. 72: 582 & 583. 1920; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 75, 85, 109, & viii. 1921; E. D. Merr., Bibl. Enum. Born. Pl. 516. 1921; Bequaert in Wheeler, Bull. Amer. Mus. Nat. Hist. 45: 591. 1922; DeWild., Pl. Bequaert. 2: 260 & 261. 1922; J. C. Willis, Dict. Flow. Pl., ed. 5, 149. 1925; Stapf, Ind. Lond. 2: 238. 1930; Wangerin, Justs Bot. Jahresber. 52 (1): 392--393. 1933; Fedde, Justs Bot. Jahresber. 52 (1): 777. 1934; B. Thomas, Engl. Bot. Jahrb. 68: [Gatt. Clerod.] 7. 1936; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 2, 496. 1941; Mold., Suppl. List Inv. Names 2. 1941; Mold., Alph. List Inv. Names 17. 1942; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 65 & 89. 1942; Uphof, Bot.

Rev. 8: 574. 1942; E. D. Merr., Pl. Life Pacif. World 97, 98, & 273, fig. 90. 1945; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 561. 1946; Mold., Alph. List Inv. Names Suppl. 1: 6. 1947; H. N. & A. L. Mold., Pl. Life 2: 44--46, pl. 8, fig. 2 & 3. 1948; Mold., Alph. List Cit. 2: 567 (1948) and 3: 764. 1949; Mold., Known Geogr. Distrib. Verbenac., ed. 2, 145, 146, & 181. 1949; J. C. Willis, Dict. Flow. Pl., ed. 6, 149. 1951; Durand & Jacks., Ind. Kew. Suppl. 1, imp. 3, 496. 1959; Mold., Résumé 192, 193, 263, 265, & 449. 1959; Emberger in Chadeaud & Emberger, Traité Bot. 2: 829 & 830. 1960; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 561. 1960; Dilmy, Govt. Sarawak Sympos. Ecol. Res. Humid Trop. Veg. 218. 1965; Grout de Beaufort & Schnell, Mém. Inst. Fond. Afr. Noire 75: 40. 1966; Rendle, Classif. Flow. Pl., ed. 2, 2: 505. 1967; Ashton, Biol. Journ. Linn. Soc. 1/2: 193. 1969; Mold., Fifth Summ. 1: 322, 444, & 447 (1971) and 2: 865. 1971; Janzen, Biotropica 6: 253. 1974; Mukherjee & Chanda, Trans. Bose Res. Inst. 41: 40. 1978; Mold., Phytol. Mem. 2: 313, 383, & 536. 1980; Mold., Phytologia 57: 346 (1985), 58: 217 (1985), and 59: 357. 1986.

Illustrations: Becc., Malesia 2: pl. 4. 1884; Heim, Assoc. Franç. Avanc. Sci. Bordeaux 1: 51. 1895; Heim, Ann. Rep. Smithson. Inst. 1896: 432/433, pl. 18. 1898; E. D. Merr., Pl. Life Pacif. World 98, fig. 90. 1945; H. N. & A. L. Mold., Pl. Life 2: 45, pl. 8, fig. 2 & 3. 1948.

A subshrub, about 1 m. tall, at first glance appearing to be glabrous throughout but actually very minutely glandular-pubescent under a handlens; stems erect, simple, straight, stiff, brittle, often reddish; internodes enlarged, clavate, inflated, hollow, basally attenuate, apically with 2 opposite holes and bilaterally compressed, with corky margins, mostly housing ants; leaves decussate-opposite, short-petiolate, sometimes one of each pair aborted; petioles 3--7 mm. long, very minutely glandular-puberulent; leaf-blades herbaceous, narrowly ovate or ovate-lanceolate to subovate-oblong, rarely lanceolate-elliptic, 15--30 cm. long, 6--10 cm. wide, apically attenuate-acuminate, marginally entire, basally sometimes obtuse to subtruncate, sometimes attenuate and acute, glabrescent and slightly shiny-green above, densely glandular-punctulate beneath and there less shiny, lighter green, and sometimes purplish or even blood-red, and (especially on young leaves) with larger, opaque, and nectariferous glands along the midrib; venation very minutely glandular-puberulent; secondaries 8 or 9 per side, arcuately anastomosing near the margins; inflorescence terminal, corymbosely cymose, abbreviated, compact, sparingly branched, the branches bracteate, few-flowered, very minutely glandular-puberulent; pedicels 8--10 mm. long, very minutely glandular-puberulent; flower-buds dull-green, with deep-red calyx-tips; calyx during anthesis deeply 5-parted, at first with only the tips of the lobes dull-red, later the entire calyx thus, externally glabrous, the lobes lanceolate, apically long-acuminate; corolla hypocrateriform, white, externally glabrous, its elongate tube 8--9 cm. long, glabrous, apically hardly dilated, the lobes broadly linear or spatulate; fruiting-calyx shiny, red.

This member of Subgenus *Siphonanthus* is based on Beccari 45, 330, & 3574 from Kutcin, Sarawak. Beccari (1884) gives a very long and

detailed description in Italian, comparing its myrmecophily with that of *Endospermum*, *Cecropia*, and *Acacia cornigera*. The ant that occupies the stems of *Clerodendrum fistulosum* is *Colobopsis clerodendri* Emery, illustrated by Beccari on p. 51 of his above-cited work (fig. 2 & 3).

Bower (1887) says "Of the myrmecophilous plants cited by Beccari that most nearly corresponding to *Humboldtia* is *Clerodendron fistulosum*, a new species; here also the internodes are swollen, and hollowed, and inhabited by ants, which gain access to the interior by the slit-like holes, two of which are situated, one on either side, at the upper end of each internode. Beccari is of the opinion that both the swollen form of the internodes and the first origin of the holes have become inherited characters of the species, as an adaptation to the requirements of the protecting ants. Somewhat similar slit-like holes are to be found in *Myristica myrmecophila*...The form of the orifice in this case also would suggest that the initiative in their formation is taken by the plant."

Heim (1898) describes the host and the tenants as follows: "The *Clerodendrum fistulosum* is a verbenaceous plant visited and inhabited by ants. Its straight stem, about a meter in height, has internodes that all appear enlarged. Each enlargement has at its summit, just below the insertion of the leaf of the internode above (one of the two opposite leaves of each internode having aborted), an orifice bounded by a projecting rim. The ants are attracted to the surface of the plant by little nectaries situated on the inferior surface of the leaves near the median nervure. It is not yet known if these internodes with their apical openings are absolutely constant features. Beccari supposed that the irritation produced by ants may cause a notable increase in the internodes and in the size of their cavity. The openings may have been in the first place the work of ants, though the cavities do not inter-communicate, for the ants that inhabit this *Clerodendron* belong to an eminently perforating genus (*Colobopsis*). It would appear, however, that at the present time these openings are produced without the intervention of ants, that a lesion has become hereditary. The services rendered by ants to the *Clerodendron* are, first, a protection against herbivora. Delpino saw a plant of this genus (*C. fragans*) defended by armies of ants as soon as anyone attempted to gather its flowers. Then these myrmecophilous features may assist the *C. fistulosum* in its struggle for existence with neighboring species. The irritation produced by the ants may perhaps cause a notable increase in the internodes and their more effective lignification, the subherbaceous plant being thus enabled to struggle with more advantage against rival species in the midst of tropical vegetation largely of a ligneous character. If this is the case we may suppose that primitively individuals inhabited by ants survived in preference to those which were not so inhabited, and natural selection consequently fixed these myrmecophilous features. The swelling of the internodes and the perforations, at first accidental characters, became normal."

An opposing view is held by Uphof (1942) who notes that in this species and *C. phyllomega* var. *myrmecophilum* (Ridl.) Mold. "In the

upper part of [the] internodes just below the leaves 2 thin-walled layers in the parenchyma can easily be pierced by the ants and it is at these places that they force entrance into the hollow chambers. There is no doubt that the ants here find protection; it is, however, not known of what advantage they are to the plant."

Hallier (1918) cites *Hallier B. 1433* and *Haviland & Hose 589* from Borneo and asserts that he brought living plants of the former collection to Buitenzorg. He comments that the plant is a "Halbstrauch von 1--2 Fuss Höhe, stets mit Ameisen. Die Fisteln trocken und spröde, wie Schilfhalme, nicht weich, wie beim Lembuh = *Macaranga*, oft trübroth angelaufen. Ihre Löcher, ursprünglich wohl Lentizellen, mit Korkrand und unterhalb oder seltener auch interpetiolar über den Blattpaaren. Erwachsene Blätter oberseits schwach glänzend grün, unterseits schwächer glänzend, hellgrün oder oft bluthroth, drüsig punktiert und längst der Nerven jüngerer Blätter zahlreiche Nektarien; deren Skret wahrgenommen. Kelch der Knospen matt, grün mit trübroth angehauchten Spitzen, später ganz trübroth und matt, zur Fruchtzeit glänzend roth. Kronröhre der Knospe weiss, die keulenförmige Spitze hellgrün. Bei den Dajaken Pengâlès oder Pèrèkâp tadjie [genannt]. Heilmittel gegen Berr-berri; die Blätter werden fein gemacht und damit der kranke Körpertheil eingerieben; die Fisteln werden zu Asche verbrannt und dann eingerieben."

Wangerin (1924) summarizes the work of DeWildeman (1920) as follows: "Enthält auch einige einleitende Hinweise auf die Myrmekophilie der Gattung [*Clerodendrum*]. Insbesondere wird dabei auf eine Verschiedenheit der Struktur hingewiesen, die darin besteht, dass bei *C. fistulosum* die Höhlungen der einzelnen Stengelglieder an den Knoten durch Querwände voneinander getrennt sind, während bei verschiedenen afrikanischen Arten solche fehlen und ein einheitlicher, von unten bis oben durchgehender Hohlraum vorhanden ist. Im Übrigen sind noch nicht bei allen afrikanischen Arten, welche Höhle Stengel besitzen, auch wirklich Ameisen als Inwohner festgestellt worden." In other words, it seems that in some African species the chambered stem may not actually be used by ants at all - thus rendering credence to Heim's theory.

Collectors have encountered *Clerodendrum fistulosum* in dry sandy soil of xerophyllous woods, flowering in December. Janzen (1974) refers to it as "rare". The *Mjoberg 208* is said to represent a topotype collection.

Citations: GREATER SUNDA ISLANDS: Kalimantan: *Boschproefstation s.n.* [29.8.31] (Bz--19258); *Buwalda 7643* (Bz--72901); *H. Hallier B. 1433* (Bz--19267, Bz--19269 in part, Ca--236916, Ca--265180); *Mondi 290* (Bz--19265, Bz--19268, Bz--19269 in part, Bz--25502), *295* (Bz--19264, Bz--19266, Ld--photo, N--photo); *Polak 175* (Bz--19263); *Schuitmaker 108* (Bz--19255), *109* (Bz--19256), *VIII* (Bz--19257); *Teijsmann 7927* (Bz--19261), *s.n.* (Bz--19259, Bz--19260). Sarawak: *Dabong 527* (Ph); *Hose 615* (Ph); *Mjoberg 208* (Bz--19262, Ca--234203, N); *Native collector 1076* (W--1174088), *1372* (W--1174111). MOUNTED ILLUSTRATIONS: Becc., Malesia 2: pl. 4. 1884 (Ld).

CLERODENDRUM FLAVUM Merr., Philip. Journ. Sci. 30: 424--425 [as "Clerodendron"]. 1926; Mold., Known Geogr. Distrib. Verbenac.,

ed. 1, 62 & 89. 1942.

Synonymy: *Clerodendron flavum* Merr., Philip. Journ. Sci. 30: 424--425. 1926.

Bibliography: E. D. Merr., Philip. Journ. Sci. 30: 424--425. 1926; A. W. Hill, Ind. Kew. Suppl. 8: 54. 1933; Fedde & Schust, Justs Bot. Jahresber. 54 (2): 747. 1934; Mold., Known Geogr. Distrib. Verbenac., ed. 1, 62 & 89 (1942) and ed. 2, 141 & 181. 1949; Mold., Résumé 183 & 449. 1959; Mold., Fifth Summ. 1: 315 (1971) and 2: 865. 1971; Mold., Phytol. Mem. 2: 306 & 536. 1980.

An erect shrub, about 1 m. tall; branches terete, grayish, glabrous; ultimate branchlets densely pubescent with dirty-brown hairs; leaves decussate-opposite, somewhat crowded near the tips of the branchlets; petioles 2--6 cm. long, rather densely pubescent; leaf-blades membranous, olivaceous, subelliptic to broadly elliptic, 15--30 cm. long, 10--16 cm. wide, apically broadly acute, marginally entire, basally rounded, the upper surface smooth, the lower surface slightly paler and distinctly puberulent on the venation and with widely scattered, small, discoid glands; inflorescence terminal, paniculate, erect, densely many-flowered, about 15 cm. long and wide, rather densely pubescent with dirty-brown hairs, the primary inflorescence-branches to 8 cm. long and spreading or somewhat ascending, the lower ones sometimes subtended by greatly reduced leaves (bracts) not over 1.5 cm. long; bractlets and bracteoles small, deciduous, the latter scarcely 1 mm. long; calyx about 8 mm. long, externally sparingly pubescent or puberulent, the 5 lobes lanceolate, about 6 mm. long, 1.5 mm. wide, apically acuminate, slenderly 3-veined, externally with scattered, small, often rather obscure, discoid glands; corolla yellow, the tube slender, 1.6 cm. long, glabrous or slightly puberulent, the lobes spreading, subequal, oblong-obovate, about 1 cm. long and 5 mm. wide, apically broadly rounded; stamens exserted about 2 cm., red when fresh, glabrous.

This species is based on *Ramos & Edaño Philip. Bur. Sci. 43899* from forests along small streams near the summit of Mount Oaho, at about 700 m. altitude, in the Sulu Archipelago, Philippine Islands, collected in September, 1924. Merrill (1926) says that this is "A species remarkable for its yellow flowers, manifestly belonging in the group with *Clerodendron williamsii* Elm., but differing in very numerous characters. It is clearly more closely allied to *Clerodendrom myrmecophyllum* [sic] Ridl. of the Malay Peninsula and Borneo than it is to *C. williamsii* Elm."

The corollas are said to have been "orange-vermillion" on *Ebalo 685*, who found the plant in flower in November.

Citations: PHILIPPINE ISLANDS: Mindanao: *Ebalo 685* (Mi).

CLERODENDRUM FLORIBUNDUM R. Br., Prodr. Fl. Nov. Holl., imp. 1, 1: 511. 1810.

Synonymy: *Clerodendrum florabundum* Hassall, Ann. Mag. Nat. Hist. 9: 550. 1842. *Clerodendron floribundum* R. Br. apud Voigt, Hort. Suburb. Calcut. 473. 1845. [not *C. floribundum* Hort., 1847, nor Lindl., 1977, nor K. Sch., 1980]. *Clerodendron floribunda* R. Br. apud F. Muell., Fragm. Phyt. Austral. 9: 5. 1875. *Siphonanthus floribundus* Britten in Banks & Soland., Illustr. Austral. Pl. 2:

[Bot. Cook Voy.] 75, pl. 239. 1901. *Siphonanthus floribunda* J. Britten apud Prain, Ind. Kew. Suppl. 4, imp. 1, 166. 1913. *Siphonanthus floribunda* [R. Br.] J. Britton apud Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 95 in syn. 1921. *Clerodendron floribundum* N. E. Br. ex Mold., Prelim. Alph List Inv. Names 19 in syn. 1940. *Clerodendron floribundum* R. Br. ex Menninger, 1958 Price List [2] sphalm. 1958. *Clerodendron floribundum* R. Br. ex Menninger, 1960 Price List Flow. Trees [3] sphalm. 1960. *Siphonanthus floribunda* (R. Br.) Britten ex Mold., Fifth Summ. 1: 622 in syn. 1971. *Clerodendron floribundum* R. Br. ex Mold., Phytol. Mem. 2: 385 in syn. 1980. *Siphonanthus floribundas* Britten ex Mold., Phytol. Mem. 2: 437 in syn. 1980.

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Illustrations: Banks & Soland., *Illustr. Austral. Pl.* 2: [Bot. Cook Voy.] pl. 239. 1901.

A small tree, to 6.5 m. tall, large shrub or subshrub, 1--2 m. tall, or shrubby climber, slender, mostly erect, free-flowering; stems usually several, smooth, greenish-yellow, speckled; bark light-gray or brown, corky, furrowed, rough and longitudinally fissured on the trunk, smooth and light-brown on the branches; leaves decussate-opposite, succulent; petioles very slender, 2--6.5 cm. long, mostly quite elongate, usually glabrous or nearly so; leaf-blades firmly chartaceous, often noticeably bicolored, bright- or dull-green above, paler beneath, mostly broadly elliptic, 6--16 cm. long, 2.5--6 cm. wide, apically acute or short-acuminate, marginally entire or subundulate, basally acute, usually glabrous on both surfaces or very minutely pilosulous on the venation beneath, densely punctate beneath; inflorescence axillary, cymose or corymbiform or the upper ones often aggregated in a sometimes subumbelloid panicle, lax, its ramifications glabrous or minutely puberulous, the ultimate ones 3-flowered; peduncles slender, 2.5--5.5 cm. long, glabrous or nearly so; bracts

foliaceous, lanceolate or elliptic, stipitate, 1.5--2.5 cm. long, 0.5--1 cm. wide, glabrous or nearly so on both surfaces, the stalk 2--3 mm. long; bractlets about 5 mm. long, sessile; pedicels slender, 3--5 mm. long, very minutely puberulous; flowers pleasantly scented, often insect-galled; calyx campanulate, about 9 mm. long, glabrous or nearly so, the teeth 5, lanceolate, about as long as the tube, apically acute; corolla hypocrateriform or infundibular, white, its tube slender, about 3.5 cm. long, the lobes ovate, about 7 mm. long; stamens inserted about  $\frac{2}{3}$  the distance above the base of the corolla-tube, exerted about 2.3 cm.; style slender, about 5.8 cm. long; stigma bidentate or shortle bifid; ovary externally glabrous; fruiting-calyx large, bright- or dark-red; fruit drupaceous, about 1.5 cm. in diameter when mature, purple or purplish-black to black.

This extremely variable and polymorphic species is based on an unnumbered Robert Brown collection from "Littora Novae Hollandiae intra tropicum", deposited in the British Museum herbarium. It is native to Australia and New Guinea, but cultivated in Australia, South Africa, Sri Lanka, India, Florida, and probably elsewhere, mostly for ornament or as specimen plants. Francis (1929) gives its natural distribution as northern New South Wales to the Cape York Peninsula, inland in northwestern Queensland, North Australia, and Papua. Domin (1928) gives its distribution as northwestern and northern Australia, Queensland, northern New South Wales, and South Australia, also New Guinea (the wide-leaved variety *latifolium*) -- "Neu Guinea (teste F. v. Mueller, die breitblättrige Varietät); auch Schumann und Lauterbach (1901).....führen die Art aus Neu Guinea an, doch wird die betreffende Form in Nachträgen 371 (1905) als eine selbständige Art (*C. rhytidophyllum* Schum.) abgetrennt.....Species admodum variabilis, *C. attenuatum* R. Br. et *C. medium* R. Br. amplexens; varietas *ovatum* (= *C. ovatum* R. Br., *C. cardiophyllum* F. v. Muell. et verosimiliter *C. floribundum* var. *latifolium* F. v. Muell. Fragm. IX.5, 1875) a typo specei longius distat." It is possible that the New Guinean material cited below actually represents the segregated and obviously very closely related *C. rhytidophyllum*, now regarded by me as conspecific with *C. porphyrocalyx* Lauterb. & K. Schum., which see. I eagerly await the revisionary treatment of Australian *Clerodendrum* taxa now being undertaken by Dr. Munir. Schumann & Lauterbach originally (1889, 1900) cited *Hollrung 631* from New Guinea as *C. floribundum* and Lam (1919) cites *Schlechter 18903* from New Guinea, but both of these collections are now regarded by me as misidentifications.

Collectors have encountered *Clerodendrum floribundum* in the wet edges of savanna forests, along railroad tracks, in the margins of high forests, on sandstone hills and rock piles, at the edges of lakes and creeks, in light scrub formations, in open grassy places, and in the yellow-red clay soil of *Eucalyptus* woodlands, at 300--800 m. altitude, in flower in February, March, May to August, and December, and in fruit in May, August, and September. Everist describes it as a "fairly common slender erect tree about 10 feet tall" or as a "shrub with several erect stems to 7 feet tall in shallow yellow loam on limestone outcrops"; White reports it "common in light rainforests". Lazarides & Story refer to it as "rare in deep sandy soil with *Eucal-*

*yptus polycarpa* and *Heteropogon contortus*; Wilson found it growing on "slopes of sandy residuul with *Eucalyptus miniata* and *Acacia* sp." Perry describes it as a "straggly low tree 10 feet tall common in stony heavy-textured soil on a volcano", as an "erect 4--6-foot shrub growing from the [fallen] trunk of a tree (*Eucalyptus similis*); and "growing on creek banks with *Eucalyptus camalduensis*". Lazarides refers to the species as an "occasional erect shrub 4 feet tall in coarse red sandy soil with *Salsola kali*"; Millar & Holttum describe it as a "small tree, 20 feet tall".

Curiously, the species is described as a "scandent shrub" by Clemens and as a "small shrubby climber" by Womersley.

Only one common name, "bundle-flowered clerodendrum", and one vernacular name, "thurkoo", have been reported.

Insect-galled inflorescences are to be seen on Flecker 14164, while on White 12163 the collector reports "practically every flower [is] galled".

The corollas are said to have been "white" on Everist 3320, Lazarides 5214, Maconochie 572, McKee 1777, Millar & Holttum 15785, and Perry 3612, but on Wilson 293 the "flowers" are said to have been "bright-red" [probably a reference to the fruiting-calyxes, not the corollas].

It is worthwhile noting here, in view of the polymorphic habit of this taxon, that Brown's original (1810) description of the type is merely "foliis elliptico-lanceolatis glabris, calycis laciniis acutiusculis tubo brevioribus corollisque glabris. (T.) v.v."

The Banks & Solander collection, cited below, is said to have been the basis for the picture published in the *Illust. Bot. Cook's Voyage* pl. 239. The unnumbered Robert Brown collection from North Australia, cited below, in the Columbia University herbarium, is inscribed "*Clerodendron floribundum* var.", so obviously does not represent the type collection.

On the unnumbered Clemens collection from Jericho, collected on May 1, 1940, there is an inscribed comment reading: "2 types of flowers in each cluster". Lazarides 5214 and Lazarides & Story 73 each have a photograph of the plant in situ accompanying the specimen, while Wilson 293 is accompanied by 3 in situ photographs. Wilson, by the way, refers to the plant as a "7-foot shrub with gray-pruinose leaves".

Gibbs (1974) reports that the HCl/methanol test gave negative results when applied to this plant, while the Ehrlich test gave doubtfully positive (olive-brown) results when applied to the leaves.

Schumann & Hollrung (1889) claim that Hollrung 631 is the first record for the species outside of Australia ["Neu-Holland"]. They comment that "Die vorliegenden Exemplare sind nicht ganz streng mit der vorstehenden Art [*C. floribundum*] in ihren reinsten Formen in Uebereinstimmung zu bringen, sie geht offenbar durch die dichteren Blütenstände und die spärliche Bekleidung derselben zu *C. tomentosum* über; solche Formen hat bereits Bentham mehrfach erwähnt. Wahrscheinlich sind beide Arten in eine zu vereinigen, wozu auch trotz der et was längeren Corolle *C. Cunninghamii* Bth. gehörten dürfte."

It should be noted that the *C. floribundum* Hort. and *C. floribun-*

*dum* Lindl., referred to in the synonymy (above), are regarded by me as synonyms of *C. emirnense* Bojer, while *C. floribundum* K. Sch. is *C. porphyrocalyx* Lauterb. & K. Schum. The *C. ovalifolium* (A. L. Juss.) Bakh. (1921), sometimes regarded as the valid name for the taxon we call *C. floribundum*, actually belongs in the synonymy of *C. floribundum* var. *latifolium* F. Muell. and cannot legally replace *C. floribundum* because it is antedated by the *C. ovalifolium* of A. Gray (1862). *Clerodendrum ovatum* R. Br. and *C. cardiophyllum* F. Muell. also belong in the synonymy of *C. floribundum* var. *latifolium* F. Muell., as do also *Clerodendron floribundum* var. *ovatum* (R. Br.) Domin and *Ovieda ovalifolia* A. L. Juss. *Clerodendrum attenuatum* R. Br., also often included questionably in the synonymy of typical *C. floribundum*, is regarded by me as *C. floribundum* var. *attenuatum* (R. Br.) Mold., *C. medium* R. Br. is regarded by me as *C. floribundum* var. *medium* (R. Br.) Mold., and *C. coriaceum* R. Br. is *C. floribundum* var. *coriaceum* (R. Br.) Mold., which see.

Menninger (1960) mistakenly refers to *C. floribundum* as a "Cuban white-flowered tree". In 1950 he was offering 8--15-inch seedlings to the horticultural trade for \$1 US; in 1954 he offered 15-inch plants for \$2 US and in 1955 1--4-foot seedlings were selling at \$1 US per foot. He refers to the plant as having "pretty foliage".

It should also be noted here that Lam (1924) cites the date of Brown's original description of this species as "1827" instead of 1810. Domin, in his 1928 work (sometimes cited as "89 (6)" or "89 (22)"), cites the Schumann & Lauterbach work as "1901" instead of 1900.

Material of typical *C. floribundum* has been misidentified and distributed in some herbaria as *C. album* Ridl., *C. coriaceum* R. Br., *C. fallax* Lindl., *C. inerme* R. Br., and *C. tomentosum* R. Br. On the other hand, the *Clemens* s.n. [Mt. Glorious, Jan. 1945], *Schlechter* 18903, and *White* 12163, distributed as typical *C. floribundum*, are regarded by me as *C. cunninghamii* Benth., while *Blake* 23495, *Clemens* s.n. [17 March 1946], and *White* 8675 & 9526 are *C. floribundum* var. *latifolium* F. Muell., *Clemens* 43441 is *C. glabrum* E. Mey., *Brown* s.n. is *C. populneum* Beer & Lam, *Hollrung* 613 is *C. porphyrocalyx* Lauterb. & K. Schum., and *Cunningham* 389 is not verbenaceous and is probably a *Cordia* sp.

Citations: NEW GUINEA: Papua: *Armit* s.n. [Aroa River 1884] (Mb), s.n. [British New Guinea 1895] (Mb); *Chalmers* s.n. [S.E. New Guinea 1878] (Mb), s.n. [1880] (Mb); *D'Albertis* s.n. (Mb); *Goldie* s.n. [Port Moresbey] (Mb); *Lames* s.n. (Mb); *W. MacGregor* s.n. [Rigo] (Mb); *Womersley* 8766 (Ng--16901). Territory of New Guinea: *Millar & Holttum* 15785 (W--2518367). West Irian: *McKee* 1777 (Ng--16871). AUSTRALIA: New South Wales: *Boorman* s.n. [Dorrigo 12.1909] (Vt); *Herb. Prager* 18681 (Gg--32013); *Vicary* s.n. [1836-7] (S); *W. W. Watts* s.n. [Richmond River 1902] (Vt). Northern Territory: *R. Brown* s.n. (C); *Lazarides* 5214 (W--2374818); *Maconochie* 572 [Herb. N. T. 13643] (N); *R. Schomburgk* s.n. [North Coast] (W--75177); *F. Schultz* 120 (L); *I. B. Wilson* 293 (W--2927657, W--2927658). Queensland: *M. S. Clemens* s.n. [January 1945] (N), s.n. [Jericho, May 1, 1946] (F--photo, Ld--photo, Mi, N, N--photo, Or--55923, Si--photo), s.n. [Springdale, May 8, 1946]

(Or--56344), s.n. [Double Island Point, 16 October 1946] (Mi); A. Dietrich s.n. [Brisbane, 1863-65] (B); G. E. DuRoi 4252 (S); Everist 2108 (I), 3320 (N, W--2157997); Flecker 14164 (N); Helms 1040 (W--1271438), 1449 (W--1348907); Lazarides & Story 73 (W--2518673); Mac Gillivray 2207 (La); Michael 987 (Bz--20116); F. Mueller s.n. (Pd); R. A. Perry 1100 (W--2156493), 3586 (W--2277813), 3612 (W--2277818); Richmond s.n. [Yalleroi] (Or--55926); C. T. White [Kajewski] 1130 (N, S), 6310 (N). South Australia: R. Schomburgk s.n. [S. Australia] (Br). Western Australia: Gulliver 27 (Ld--photo, N--photo, P); Herb. Mus. Nac. Hist. Nat. Chile 16049 (Sg). State undetermined: Banks & Solander s.n. [1770] (W--1276764); R. Brown s.n. (L, L); Verreaux 650 (N--photo). AUSTRALIAN ISLANDS: Bathurst: Cunningham 289 (N). Fisherman: Chalmers s.n. [1880] (Mb). CULTIVATED: Australia: M. S. Clemens 42729 (Mi). Natal: H. Forbes 1014 (Na--35602); Natal Herb. 9289 (Ld--photo, N--fragment, N--photo, Na, S--photo). Sri Lanka: Moldenke, Moldenke, & Jayasuriya 28154 [Roy. Bot. Gard. Perad. 32.67] (Ld, N, Pd, W--2764422). LOCALITY OF COLLECTION UNDETERMINED: Karta 286 (Mb). MOUNTED ILLUSTRATIONS: F. Bauer Icon. 957 (V), 957a (V).

*CLERODENDRUM FLORIBUNDUM* var. *ANGUSTIFOLIUM* Mold., *Phytologia* 37: 22. 1977.

Bibliography: Mold., *Phytologia* 37: 22. 1977; Hocking, Excerpt. Bot. A.30: 421. 1978; Mold., *Phytol. Mem.* 2: 334 & 536. 1980; H. N. & A. L. Mold. in Dassan. & Fosb., *Rev. Handb. Fl. Ceyl.* 4: 456 & 457. 1983.

This variety differs from the typical form of the species in its leaf-blades being narrowly elliptic, mostly about 4--7 cm. long and 1--3 cm. wide, apically acuminate, and basally acute or subacuminate.

The variety is based on C. T. White 8675 from Tarrens Creek, northern Queensland, Australia, collected on March 19, 1933, and deposited in the B. A. Krukoff Herbarium at the New York Botanical Garden. The collector notes that in the type locality it is a fairly common shrub in rocky places, the flowers being "faintly scented" and the corollas white. The corollas are also said to have been white on Blake 23495 and White 9526.

Collectors describe this plant as a shrub or small slender tree, to 6 m. tall, the bark light-gray and fissured, and the leaf-blades dull-green above and paler beneath. They have found it growing in "light dune scrub", in flower in March, May, and October. Material has been distributed uniformly determined as typical *C. floribundum* R. Br.

Citations: AUSTRALIA: Queensland: S. T. Blake 23495 (Ac, Ld, N, N); M. S. Clemens s.n. [Jericho, 17 March 1946] (Ca--81171, N, N, S), s.n. [Jericho, Apr. 3, 1946] (Mi), s.n. [Springvale ranch, April 15, 1946] (Or--55924, Or--55925); C. T. White 8675 (N--type, N--isotype, N--isotype), 9526 (Ca--8194, N. N).

*CLERODENDRUM FLORIBUNDUM* var. *ATTENUATUM* (R. Br.) Mold., *Phytologia* 39: 236. 1978.

Synonymy: *Clerodendrum attenuatum* R. Br., *Prodr. Fl. Nov. Holl.*, imp. 1, 1: 511. 1810. *Clerodendron attenuatum* R. Br. apud Spreng. in

L., Syst. Veg., ed. 16, 2: 759. 1825 [not *C. attenuatum* DeWild., 1920].

Bibliography: R. Br., Prodr. Fl. Nov. Holl., imp. 1, 1: 511 (1810) and imp. 2 [Isis 1819:] 152. 1819; Steud., Nom. Bot. Phan., ed. 1, 207. 1821; Spreng. in L., Syst. Veg., ed. 16, 2: 759. 1825; Loud., Hort. Brit., ed. 1, 247. 1830; Loud., Hort. Brit., ed. 2, 247. 1832; G. Don in Loud., Hort. Brit., ed. 3, 247. 1839; G. Don in Sweet, Hort. Brit., ed. 3, 550. 1839; Steud., Nom. Bot. Phan., ed. 2, 1: 382. 1840; D. Dietr., Syn. Pl. 3: 616. 1843; Walp., Repert. Bot. Syst. 4: 105. 1845; Schau. in A. DC., Prodr. 11: 671. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 105. 1847; F. Muell., Fragm. Phyt. Austral. 6: 152. 1868; Benth. & F. Muell., Fl. Austral. 5: 64. 1870; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 560. 1893; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 95, 108, & viii. 1921; Domin, Bibl. Bot. 89: 1112, 1928; Fedde & Schust., Justs Bot. Jahresber. 53 (1): 1073. 1932; Mold., Alph. List Inv. Names 16. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 560. 1946; Mold., Alph. List Inv. Names Suppl. 1: 7. 1947; Mold., Résumé 260 & 271. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 560. 1960; Mold., Fifth Summ. 1: 439 & 460. 1971; Mold., Phytologia 39: 236. 1978; Hocking, Excerpt. Bot. A.33: 88. 1979; Mold., Phytol. Mem. 2: 334, 390, & 536. 1980; H. N. & A. L. Mold. in Dassan. & Fosb., Rev. Handb. Fl. Ceyl. 4: 457. 1983.

This variety is said to differ from the typical form of the species in its leaf-blades being basally attenuated and the calyx externally puberulent. Brown's original (1810) description is merely: "foliis ellipticis subundulatis acutis basi attenuatis utrinque glabris, calycibus pubescentulis: laciniis acutissimis aequantibus, corollis glabris".

The variety is based on an unnumbered specimen collected by Robert Brown in the Port Jackson area of New South Wales, Australia. Sweet (1830) claims that it was introduced into cultivation in England from New South Wales in 1824. He and Loudon (1830) both call it the "attenuated clerodendrum". Domin (1928) is of the opinion that it is not sufficiently distinct to warrant nomenclatural separation from typical *C. floribundum* R. Br. and he may well be correct.

Nothing is known to me of this plant beyond what is stated in its meager bibliography (above).

**CLERODENDRUM FLORIBUNDUM** var. **CORIACEUM** (R. Br.) Mold., Phytologia 39: 236. 1978.

Synonymy: *Clerodendrum coriaceum* R. Br., Prodr. Fl. Nov. Holl., imp. 1, 1: 511. 1810. *Clerodendron coriaceum* R. Br. apud Spreng. in L., Syst. Veg., ed. 16, 2: 759. 1825 [not *C. coriaceum* Poit., 1816].

Bibliography: R. Br., Prodr. Fl. Nov. Holl., imp. 1, 1: 511 (1810) and imp. 2 [Isis 1819:] 153. 1819; Steud., Nom. Bot. Phan., ed. 1, 207. 1821; Spreng. in L., Syst. Veg., ed. 16, 2: 759. 1825; Steud., Nom. Bot. Phan., ed. 2, 1: 382. 1840; D. Dietr., Syn. Pl. 3: 616--617. 1843; Voigt, Hort. Suburb. Calcut. 473. 1845; Walp., Repert. Bot. Syst. 4: 105. 1845; Schau. in A. DC., Prodr. 11: 671. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 106. 1858; Benth. & F. Muell., Fl. Aus-

tral. 5: 64. 1870; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 1: 560. 1893; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 95, 108, & viii. 1921; Fedde & Schust., Justs Bot. Jahresber. 53 (1): 1073. 1932; Mold., Alph. List Inv. Names 17. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 560. 1946; Mold., Alph. List Inv. Names Suppl. 1: 7. 1947; Mold., Résumé 262 & 272. 1959; Jacks. in Hook. f. & Jacks., imp. 3, 1: 560. 1960; Mold., Fifth Summ. 1: 442 & 461. 1971; Hocking, Excerpt. Bot. A.33: 88. 1979; Mold., Phytol. Mem. 2: 334, 391, & 536. 1980; H. N. & A. L. Mold. in Dassan. & Fosb., Rev. Handb. Fl. Ceyl. 4: 456 & 457. 1983.

This variety is said to differ from the typical form of the species in its petioles being tomentose and its leaf-blades being subcoriaceous in texture and tomentose beneath. Brown's original (1810) description is merely "foliis ovatis acutis subcordatis subtus reticulato-venosis subrugosis petiolisque tomentosis, pedunculis axillaribus terminalibusque trichotomis".

The variety is based on an unnumbered Robert Brown collection from near the Endeavour River and Bay of Inlets in the "Littora Novae Hollandiae, Queensland, Australia.

Nothing is known to me of this plant beyond what is stated in its bibliography (above).

*CLERODENDRUM FLORIBUNDUM* var. *LATIFOLIUM* F. Muell., Fragm. Phyt. Austral. 9: 5 [as "*Clerodendron*" and "*latifolia*"]. 1875; Mold., Phytol. Mem. 2: 385. 1980.

Synonymy: *Oviada ovalifolia* A. L. Juss., Ann. Mus. Hist. Nat. Paris 7: 76. 1806. *Clerodendrum ovatum* R. Br., Prodr. Fl. Nov. Holl., imp. 1, 511. 1810. *Clerodendrum ovatum*  $\alpha$  R. Br., Prodr. Fl. Nov. Holl., imp. 1, 511. 1810. *Clerodendrum ovatum*  $\beta$  R. Br., Prodr. Fl. Nov. Holl., imp. 1, 511. 1810. *Clerodendron ovatum* R. Br. apud Spreng. in L., Syst. Veg., ed. 16, 2: 758. 1825 [not *C. ovatum* Poir., 1816]. *Clerodendron ovatum* Schau. in A. DC., Prodr. 11: 671. 1847. *Clerodendron ovatum* Schau. in A. DC., Prodr. 11: 671. 1847. *Clerodendron cardiophyllum* F. Muell., Fragm. Phyt. Austral. 3: 144--145. 1863. *Clerodendron floribundum* var. *latifolia* F. Muell., Fragm. Phyt. Austral. 9: 5 ["varietatem *latifoliam*"]. 1875. *Clerodendron ovalifolium* (A. L. Juss.) Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 95. 1921 [not *C. ovalifolium* A. Gray, 1862, nor Engl., 1895]. *Clerodendron floribundum* var. *ovatum* (R. Br.) Domin, Bibl. Bot. 89: 1112. 1928. *Clerodendron ovatum*  $\alpha$  R. Br. ex Mold., Phytologia 36: 42 in syn. 1947. *Clerodendron ovatum*  $\beta$  R. Br. ex Mold., Phytologia 36: 42 in syn. 1947. *Clerodendron ovalifolium* (A. L. Juss.) Bakh. apud J. S. Beard, Descrip. Cat. W. Austral. Pl., ed. 2, 113. 1970.

Bibliography: A. L. Juss., Ann. Mus. Hist. Nat. Paris 7: 76. 1806; R. Br., Prodr. Fl. Nov. Holl., imp. 1, 1: 511 (1810) and imp. 2 [Isis 1819:] 153. 1819; Steud., Nom. Bot. Phan., ed. 1, 207 & 578. 1821; Spreng. in L., Syst. Veg., ed. 16, 2: 758. 1825; Steud., Nom. Bot. Phan., ed. 2, 1: 383. 1840; Voigt, Hort. Suburb. Calcut. 473. 1845; Walp., Repert. Bot. Syst. 4: 105. 1845; Schau. in A. DC., Prodr. 11: 671. 1847; Buek, Gen. Spec. Syn. Candoll. 3: 106. 1858; F. Muell., Fragm. Phyt. Austral. 3: 144--145 (1863) and 6: 152. 1868; Benth. &

F. Muell., Fl. Austral. 5: 64. 1870; F. Muell., Fragm. Phyt. Austral. 9: 5. 1875; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 1, 560 & 561 (1893) and imp. 1, 2: 386. 1894; F. M. Bailey, Queensl. Fl. 4: 1184. 1901; Bakh. in Lam & Bakh., Bull. Jard. Bot. Buitenz., ser. 3, 3: 95, 108, 110, viii, & ix. 1921; Domin, Bibl. Bot. 89: 1112. 1928; C. A. Gardn., Enum. Pl. Austral. Occid. 3: 112. 1931; Fedde & Schust., Justs Bot. Jahresber. 53 (1): 1073. 1932; Mold., Alph. List Inv. Names 16, 19, & 34. 1942; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 2, 1: 560 & 561 (1946) and imp. 2, 2: 386. 1946; Mold., Alph. List Inv. Names Suppl. 1: 7. 1947; Mold., Résumé 261, 267, 273, & 322. 1959; Jacks. in Hook. f. & Jacks., Ind. Kew., imp. 3, 1: 560 & 56; (1960) and imp. 3, 2: 386. 1960; J. S. Beard, Descrip. Cat. W. Austral. Pl., ed. 1, 91 (1966) and ed. 2, 113. 1970; Mold., Fifth Summ. 1: 441 & 452 (1971) and 2: 576. 1971; T. B. Muir, Muelleria 2: 166. 1972; Mold., Phytologia 36: 42. 1977; Mold., Phytol. Mem. 2: 334, 384, 385, 388, 424, & 536. 1980; H. N. & A. L. Mold. in Dassan. & Fosb., Rev. Handb. Fl. Ceyl. 4: 456. 1983.

This variety is said to differ from the typical form of the species in its broader ovate leaf-blades. Brown's original (1810) description is merely "foliis ovatis acutis: adultis glabris petiolo vix duplo longioribus, pedunculis axillaribus terminalibusque". It is based on an unnumbered Robert Brown collection from the Endeavour River and Bay of Inlets area in "Littora Novae Hollandiae". Queensland, Australia. He describes two forms without special designation nomenclaturally or as to place of collection:  $\alpha$  "Folia calycesque glabri" and  $\beta$  "Folia calycesque pubescentes".

Mueller's *Clerodendron cardiophyllum* was much more adequately described (1863): "Glabrum, foliis orbiculari-cordatis oppositis chartaceis integerrimis petiolo duplo triplove longioribus reticulato-venosis, paniculis terminalibus, floribus longiuscule pedicellatis; bracteolis lineari-setaceis, calycis quinquefidi lobis fere deltoideis acutis, corollae glabrae tubo praelongo. In virgultis *Acaciae aneurae* (Mulga Scrub) Australiae centralis; J. Macd. Stuart. Ad paludas Daly Waters; F. Waterhouse. Folia fragminum plantae suppetentium 2--3" longa. Calyces floriferi circiter 2" longi, fructiferi 3" metenties. Bracteolae fere 1" longae. Corolla pollice paulo longior. Stamina conspicue exserta. Antherae circiter 1" longae. Fructus maturi ignoti."

It is worth pointing out that the *C. ovatum* of Poiret, referred to in the synonymy (above) is a synonym of *C. inerme* (L.) Gaertn.; *C. ovalifolium* of Engler is a synonym of *C. glabrum* E. Mey. and *C. ovalifolium* of Gray is *Faradaya ovalifolia* (A. Gray) Seem.

Steudel (1840) lists *C. ovatum* R. Br. as follows: "*ovatum*, R. Br.  $\eta$  Coromand. N. Holl. S. 12. *Ovieda ovalifolia*. Juss." What the "Coromand." signifies here is difficult to guess. The Coromandel Coast is a coastal area of southeastern India, but this plant does not occur there. However, the *C. ovalifolia* of Poiret, a synonym of *C. inerme* (L.) Gaertn., does occur there.

Curiously, Beard (1970) keeps what he calls *Clerodendrum floribundum* R. Br. and *C. ovalifolium* (A. Juss.) Bakh. apart as two separate and valid species.

[to be continued]